

(19)



Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) Publication number:

**0 373 217
A1**

(12)

EUROPEAN PATENT APPLICATION
published in accordance with Art.
158(3) EPC

(21) Application number: 88901649.9

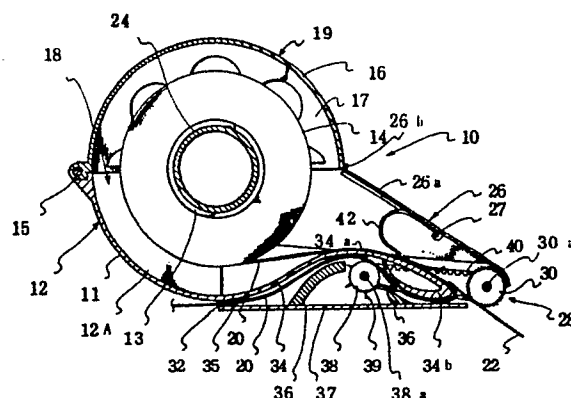
(51) Int. Cl.⁵: B65C 11/00

(22) Date of filing: 16.02.88

(86) International application number:
PCT/JP88/00156(87) International publication number:
WO 88/06126 (25.08.88 88/19)(30) Priority: 17.02.87 JP 33728/87
16.03.87 JP 60583/87(43) Date of publication of application:
20.06.90 Bulletin 90/25(84) Designated Contracting States:
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MEWBURN ELLIS & CO. 2/3 Cursitor Street
London EC4A 1BQ(GB)(54) **HAND LABELLER.**

(57) Hand labeller capable of sticking an elongated label such as a price tag of a product to the surface of the goods or the adherend of a package or container of the goods. Conventional hand labellers cannot stick an elongated label because the length of the label that can be stuck is limited. The hand labeller of the present invention is characterized in that feed of belt-like tape and sticking of the label can be carried out simultaneously by merely pressing a sticking roller for sticking the label to the adherend and moving the roller. Therefore, the hand labeller of the present invention can easily stick the elongated label.

FIG. 1



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S P E C I F I C A T I O N

TITLE OF THE INVENTION

A HAND LABELLER

FIELD OF TECHNOLOGY

The present invention relates to a hand labeller capable of sticking an elongated label easily.

BACKGROUND TECHNOLOGY

A hand labeller, which is a device for sticking a paper for indicating price of goods (a label) onto the goods or the adherend of the container of the goods, has developed.

The hand labeller lets out a belt-like tape consisting of a ground tape and labels stuck onto the ground tape in order, and the labels are torn off the ground tape to be stuck onto the goods, etc. Levers are gripped to let out the belt-like tape.

The inventor of the present invention developed a hand labeller shown in Fig. 6 (Japanese Patent Publication Gazette No. 60-50653).

In this hand labeller, the winding shaft of the belt-like tape 2 is attached on an axis 1 of the labeller proper, the belt-like tape is guided to turn at the front end of a label-pressing arm 3. And there is provided a rotary drum 4 at the base section of the label-pressing arm 3. There are radially provided needles 5 on the outer face of the rotary drum 4. The rotary drum 4 is rotated by the operation of the lever 6. When the lever 6 and a handle 7 which are attached to the labeller proper are gripped, the rotary drum 4 is rotated to let out the belt-like tape 2 by

the lever 6. Rotating the rotary drum 4, needles 5 stick into the ground tape one after the other, so that the ground tape is advanced forward. Labels are torn off from the ground tape at the turning point thereof and are pressed by a pressing roller 8 to stick onto the goods.

In the above stated hand labeller, the ground tape is advanced by gripping the handle 7 and the lever 6 to rotate the lever 6, the amount of advancing of the ground tape is defined by the rotational angle of the lever 6 and the diameter of the rotary drum 4. The rotational angle of the lever 6 cannot be so large because the lever 6 is required to be gripped, and if the diameter of the rotary drum 4 is large, the hand labeller should be large insize. And, in case of enlarging the rotational angle of the rotary drum 4 by gear mechanism, etc. to increase the amount of advancing the ground tape, there are other problems that the rotational resistance of the lever 6 is greater and the hand labeller should be larger.

Therefore, it is difficult for the conventional hand labeller to get enough amount of advancing the belt-like tape on which elongated labels are stuck to tear off the labels. In such a case, labels are torn off by user's fingers and are stuck on the surface of containers, so that a great deal of labor and time are required to stick labels.

The object of the present invention is to provide a hand labeller in which the amount of advancing the ground tape can be define in user's option and in which even elongated labels can be easily stuck onto the goods or the surface of a container.

The hand labeller of the present invention comprises a guide for turning the drawing direction of a belt-like tape

whose one face on which labels are stuck is to be outside when the belt-like tape, which consists of a ground tape on which a plurality of labels are serially stuck and which is wound on a roll, is drawn out, a sticking roller for pressing the label which is torn off at the turning point of the belt-like tape on the guide is closely provided to the turning point, and an advancing roller, which is linked to the sticking roller, has needles which are provided to advance the belt-like tape from which the labels has been torn off at the turning point with sticking into the tape one after the other.

BRIEF DESCRIPTION OF DRAWINGS

Fig. 1 shows a longitudinal sectional view of the hand labeller of the present invention, Fig. 2 shows a front view of the hand labeller, Fig. 3 shows a side view of the hand labeller, Fig. 4 shows a front view of the state of opening the cover and the cover member, Fig. 5 shows an explanation view showing the relationship between the sticking roller and a advancing roller, and Fig. 6 shows a sectional view of the conventional hand labeller.

PREFERRED EMBODIMENT OF THE INVENTION

Preferred embodiment of the present invention will now be described in detail with reference to the accompanying drawings.

Fig. 1 shows a longitudinal sectional view of the hand labeller of the present invention. Fig. 2 shows a front view of the hand labeller, and Fig. 3 shows a side view thereof.

Numerals 10 indicates the whole of the hand labeller.

The hand labeller 10 has a casing 18 having two side boards

12A and 12A, each of which has a circular section 12a and an extended section 12b extended from the circular section 12a, and which are parallelly provided and connected by a connecting section 11 each other.

The circular section of the casing 18 is an accommodating section 12 in which the wound belt-like tape is accommodated. There is provided no connecting section between the upper half part of the side boards 12A and 12A corresponding to the accommodating section 12 to form an opening section, and an attachment section 19 to which the belt-like tape 14 is attached can be entered into or come out from the opening section. Namely, as shown in Fig. 1, the attachment section 19 has a base board which is formed like a half circle, a cover which is formed like a semicylinder and is fixed on the fringe of the base board 17, and which is able to close the opening section, the one end section of the cover 16 is rotatably attached to the casing 18 with an axis 15. There is projected a cylindrical axis 24 on which the cylindrical winding shaft 13 wound by the belt-like tape is able to cover in the center part of the base board 17. There are bored circular or halfcircular holes in the base board 17.

Therefore, in the state that the attachment section 19 has been rotated outside of the casing 18 as shown in Fig. 4, the belt-like tape 14 wound on the winding shaft 13 is attached on the cylindrical axis 24 and then the attachment section 19 is rotated to enter the casing 18, so that the belt-like tape 14 is accommodated in the accommodating section 12. At that time, the semicylindrical cover 16 covers over the opening section of the casing 18.

Note that, the belt-like tape consists of an elongated ground tape 20 and labels 22 stuck on the surface of the ground tape at regular interval, and the labels 22 are to be inside when the ground tape is wound.

There is formed an arm section 26, which corresponds to the extended section 12b of the side boards 12A and 12A, in the casing 18. There is an opening section 28 from the front end of the arm section 26 to the bottom face thereof, and there is rotatably provided a sticking roller 30, which is able to rotate on an axis 30a, near the opening section 28 and approximately a half of the sticking roller 30 is projected from the casing 18. The sticking roller 30 is made of the material from which the greater frictional force can be gained such as gum, etc. and untislip grooves extended in the axial direction of the rollers are grooved on the outer face thereof.

There is a guide board 34 in the arm section 26, the guide board 34 is extended from the connecting section 11 and curved upward at approximately center part in the arm section 26 then the front end thereof descends toward the sticking roller 30.

There is also provided an arc board 34b, which is curved downward, on the bottom face of the front end section of the guide board 34.

There are guide members 36 and 36 which are provided under the arc board 34b and the guide boards 34 to form prescribed clearance (or a space for guiding the ground tape) from the arc board 34b and the guide board 34.

There are rotatably supported an advancing roller 38 with an axis 38a immediately below the top section 34a of the guide board 34 and between the guide members 36 and 36. And there are

radially provided needles 39... on the outer face of the advancing roller 38. With providing such needles, there are opened slits (not shown) for passing the needles in the arc board 34b and the guide members 36 and 36.

There are provided a bottom board 37 under the arc board 34b and the guide members 36 and 36, the clearances between the bottom board 37 and the arc board 34b and between the bottom board 37 and the guide board 34 is formed for guiding the ground tape. The front end of the ground tape 20 is discharged from the exit 32.

Note that, the arm section 26 has a cover 26a, which is provided in the upper section of the arm section and which is rotatably attached with an axis 27, so that the state of the belt-like tape 14 in the arm section 26 can be confirmed by opening the cover 26a.

There is provided a U-shaped spring member 42 under the cover 26a to press the belt-like tape 14 on the upper face of the guide board 34.

Gears 31 and 31 are respectively fixed at the end section of the axes of the sticking roller 30 and the advancing roller 38, and a timing belt 40 is engaged between the gears 31 and 31. The timing belt 40 and the gears 31 and 31 are accommodated in the belt box 41 which is projected from the side face of the arm section 26.

The amount of advancing the label 22 by the sticking roller 30 is designed to be larger than the amount of advancing the ground tape 20 by the advancing roller. For that purpose of design, the diameter of the sticking roller 30 is larger than the diameter of the advancing roller 38.

The cover 26a is capable of engaging with the side boards 12A and 12A, and the front end section 26b of the cover 26a pressed the cover 16 to keep closing the attachment section 19.

As described above, the belt-like tape 14 accommodated in the accommodating section 12 is drawn onto the guide board 34 and is turned by the front end section of the guide board 34 then passes through the clearance between the bottom board 37 and the arc board 34b, the clearance between the guide member 36 and the arc board 34b, and the clearance between the guide members 36 and 36 and the guide board 34, and finally is discharged from the exit 32.

To pass the ground tape 20 of the belt-like tape 14 through the guide spaces, the advancing roller 38 may be rotated by the rotation of the sticking roller 30. When the advancing roller 38 is rotated, the needles 39... provided on the advancing roller 38 pass through the slit sticking into the ground tape 20 one after the other, so that the belt-like tape 14 is introduced into the guide spaces.

When the cover 26a is closed, the spring member 42 presses the ground tape 20 on the guide board 34 to prevent rising.

Next, the action of the sticking label 22 will now be described.

First, gripping the rear section of the accommodating section 12 of the hand labeller 10 (or gripping the rear section of the accommodating section 12 with inserting the finger into the cylindrical axis 24). Softly pressing the sticking roller 30 onto the adherend of the goods or a container of the goods. And moving the hand labeller to this side to roll the sticking roller 30. The rotation of the sticking roller 30 is transmitted

to the advancing roller 38 by the timing belt 40, so that the advancing roller 38 is rotated in counterclockwise (in Fig. 1), so that the needles 39... provided on the advancing roller 38 stick into the ground tape one after the other to advance the ground tape 20 forward. Therefore, the belt-like tape 14 is drawn forward.

The belt-like tape 14 is turned at the front end of the guide board 34, then the label 22 is torn off from the ground tape 20 at the turning point. The material of the labels 22 is harder than the material of the ground tape 20, the hardness of the label 22 overcomes the adhesive strength of the adhesive agent adhering the labels 22 on the ground tape 20, so that the label 22 is torn off from the ground tape 20 at the turning point or the front end of the guide board 34 and is advanced under the sticking roller 30. The label 22 is stuck onto the adherend by rolling the sticking roller 30 over the upper face of the label 22.

In this case, as shown in Fig. 5, the diameter of the sticking roller 30 is larger than the diameter of the advancing roller 38; the amount of advancing the labels 22 by the sticking roller 30 is larger than the amount of the advancing the ground tape 20 by the advancing roller 38. Therefore, the ground tape 20 is slightly slacken as shown by one-dot chain line 20a in Fig. 5 while the label 22 is torn off from the ground tape 20 until the label 22 is stuck onto the adherend.

After the label 22 has been finished sticking, if the sticking roller 30 is further rotated, the advancing roller 38 continues to advance the ground tape 20 but the amount of advancing the ground tape 20 is almost equal to the amount

slacken shown as the numeral 20a, so that the belt-like tape 14 in the accommodating section 12 is substantially not advanced and the next label 22 is not torn off immediately.

The label 22 is fully pressed from its one end to the other end, so that no rising of the label 22 will be occurred.

And in case of narrow interval between the labels 22 on the ground tape 20, the labels 22 will not be doubly stuck onto the adherend of the goods or the container of the goods. Therefore, the belt-like tape 14 in which the labels 22 have been stuck onto the ground tape with high density can be used, so that the cost of the belt-like tape can be reduced, and the number of times of changing the belt-like tape 14 also can be reduced to rise the working efficiency.

Note that, the sticking roller 30 and the advancing roller 38 are linked by the timing belt 40 but the wire or the gears, etc. can be used instead of the timing belt 40.

The amount of advancing by the sticking roller 30 can be designed larger than the amount of advancing by the advancing roller 38 by adjusting the gear ratio of the gears 31 and 31.

According to the belt-like tape 14, the amount of advancing by the sticking roller 30, of course, may be equal to the amount of advancing by the advancing roller 38.

EFFECTIVENESS OF THE INVENTION

As described above, the present invention relates to the hand labeller which advances the label and presses it to stick on the adherend by rolling the sticking roller thereon, the hand labeller can easily stick even elongated labels in comparison with the conventional hand labeller which is operated to advance

labels by gripping lever. The amount of advancing the label by the sticking roller is larger than the amount of advancing the ground tape by the advancing roller, so that the ground tape goes back after sticking the label and continuous sticking can be executed.

The clearance between the labels on the ground tape can be narrower, so that the density of the labels on the ground tape can be higher.

The hand labeller can be operated by merely gripping the accommodating section and move it, so that sticking work can be executed with easy operation which includes tearing off the labels and sticking them in one action. Further, the advancing mechanism can be simple and the number of the parts also can be reduced.

ABILITY OF INDUSTRIAL APPLICATION

The present invention will be applied the hand labeller for sticking elongated labels such as price tag onto the adherend of the goods or the container of the goods.

C L A I M S

1. A hand labeller comprising,

a guide for turning the direction of drawing of a belt-like tape in order that the one face on which labels have been stuck of said belt-like tape is to be outer side, said belt-like tape wound has a ground tape on which labels are serially stuck;

a sticking roller for pressing to stick said label which is torn off from said ground tape at the turning point of said belt-like tape, said sticking roller is provided adjacent to the turning point; and

an advancing roller for advancing said ground tape from which said labels have been torn off, said advancing roller is provided on the lower side of advancing direction of said belt-like tape of the turning point, said advancing roller is linked to said sticking roller to be driven.

2. The hand labeller according to claim 1, wherein said sticking roller is made of gum and grooves extended in the axial direction are grooved on the outer face thereof.

3. The hand labeller according to claim 1 or 2, wherein said advancing roller has needles which stick into said ground tape one after the other to advance on the outer face thereof.

4. The hand labeller according to claim 1, 2 or 3, wherein said sticking roller and said advancing roller are linked by a timing belt.

5. The hand labeller according to claim 1, 2, 3 or 4, wherein the amount of advancing said belt-like tape by said sticking roller is larger than the amount of advancing said belt-like tape by said advancing roller.

6. A hand labeller comprising,

a casing having two side boards which are mutually arranged to separate away with prescribed clearance and a connecting section which connects said two side boards, an accommodating section for accommodating a belt-like tape wound which has a ground tape on which labels are serially stuck and an arm section which is extended from said accommodating section are formed in said casing;

an opening section formed from the front end of said arm section to the bottom section thereof;

a sticking roller for pressing to stick said label which has been torn off from said ground tape on the adherend, said sticking roller is rotatably supported between said side boards and a part of the outer face thereof is projected from said opening section;

a guide board for guiding said belt-like tape in said accommodating section adjacent to said sticking roller;

a guide section for guiding said ground tape which is turned at the front end of said guide board to introduce under the lower side of said guide board in the advancing direction;

an advancing roller for advancing said ground tape in the advancing direction, said advancing roller is rotatably provided at midway of said guide section; and

means for transmitting which links said advancing roller to said sticking roller to transmit the rotation of said sticking roller to said advancing roller.

7. The hand labeller according to claim 6, wherein said advancing roller has needles for advancing said ground tape with sticking thereinto one after the other.

8. The hand labeller according to claim 6 or 7, wherein said sticking roller is made of gum, and there are grooved grooves in the axial direction on the outer face thereof.

9. The hand labeller according to claim 6, 7 or 8, wherein said means for transmitting has gears which are respectively and coaxially provided to said sticking roller and said advancing roller and a timing belt engaged with said gears.

10. The hand labeller according to claim 6, 7, 8 or 9, wherein the amount of advancing said belt-like tape by said sticking roller is larger than the amount of advancing said belt-like tape by said advancing roller.

11. The hand labeller according to claim 6, 7, 8, 9 or 10, wherein said guide board is bent upward and said advancing roller is provided in the bent section thereof.

12. The hand labeller according to claim 6, 7, 8, 9, 10 or 11, wherein said guide section has a guide means for forming a space for advancing said ground tape between the bottom face of said guide board and said guide section.

13. The hand labeller according to claim 12, wherein said guide means has a slit through which said needles of said advancing roller is passed.

14. The hand labeller according to claim 6, 7, 8, 9, 10, 11, 12 or 13, wherein said accommodating section has a cylindrical axis to which said belt-like tape wound attached, and an attachment section which can be rotated between first position where said attachment section is between said side boards and second position where said attachment section is outside of said side boards.

C L A I M S

1. (deleted)
2. (deleted)
3. (deleted)
4. (deleted)
5. (deleted)
6. (deleted)
7. (deleted)
8. (deleted)
9. (deleted)
10. (deleted)
11. (deleted)
12. (deleted)
13. (deleted)
14. (deleted)
15. (added)

A hand labeller comprising,

a casing having an accommodating section, which is formed by two side boards provided at prescribed interval and a connecting board connecting said side boards, for accommodating a belt-like tape which consists of a ground tape and labels serially stuck on said ground tape, and an arm section extended from said accommodating section;

a guide board for guiding said belt-like tape drawn from said accommodating section toward the front end of said arm section by way of the one face on which said labels are stuck of said belt-like tape to be outside so as to turn the direction of said belt-like tape at the front end of said arm section toward

the base section of said arm section to tear off said labels from said ground tape;

a sticking roller rotatably supported in an opening section between said side boards, said opening section is formed around the front end of said arm section of said casing, the part of said sticking roller is projected from said opening section to press and stick said labels torn off from said ground tape on the adherend;

an advancing roller, which is provided on the advanced side of the turning point of said guide board, said advancing roller is linked to said sticking roller in order that said ground tape is advanced after said labels are torn off;

an opening section formed between said side boards, said opening section is approximately semicircular part of said casing corresponding to said accommodating section; and

an attachment section having a base board and an axis on which said belt-like tape can be attached and which is provided on said base board, the one end of said base board is rotatably connected, whereby said base board and said axis can be rotated from first position which is between said side boards to second position which is outside thereof via said opening section of said casing.

16. (added)

The hand labeller according to claim 15, wherein said base board has a semicylindrical cover which closes said opening section of said casing when said side board and said axis are placed between said side boards.

17. (added)

The hand labeller according to claim 16, wherein the one

end of said cover of said base board is rotatably provided at the one end of connecting board of said casing.

18. (added)

The hand labeller according to claim 15, 16 or 17 wherein said axis is formed as a cylindrical axis, the center hole of said axis coincides with through-holes bored in said boards when said base board and said axis are placed between side boards, and said through-holes and said axis are formed as a grip section of said casing.

19. (added)

The hand labeller according to claim 15, 16, 17 or 18, wherein said connecting board corresponding to said arm section of said casing has a through-hole and said through-hole of said connecting board is opened or closed by a cover member so as to confirm the state of said belt-like tape.

20. (added)

The hand labeller according to claim 15, 16, 17, 18 or 19, wherein said advancing roller has needles for advancing said ground tape with sticking into said ground tape one after the other on the outer face thereof.

21. (added)

The hand labeller according to claim 15, 16, 17, 18, 19 or 20, wherein said sticking roller and said advancing roller is linked by a timing belt.

22. (added)

The hand labeller according to claim 15, 16, 17, 18, 19, 20 or 21, wherein the amount of advancing said belt-like tape by said sticking roller is larger than the amount of advancing by said advancing tape.

FIG. 1

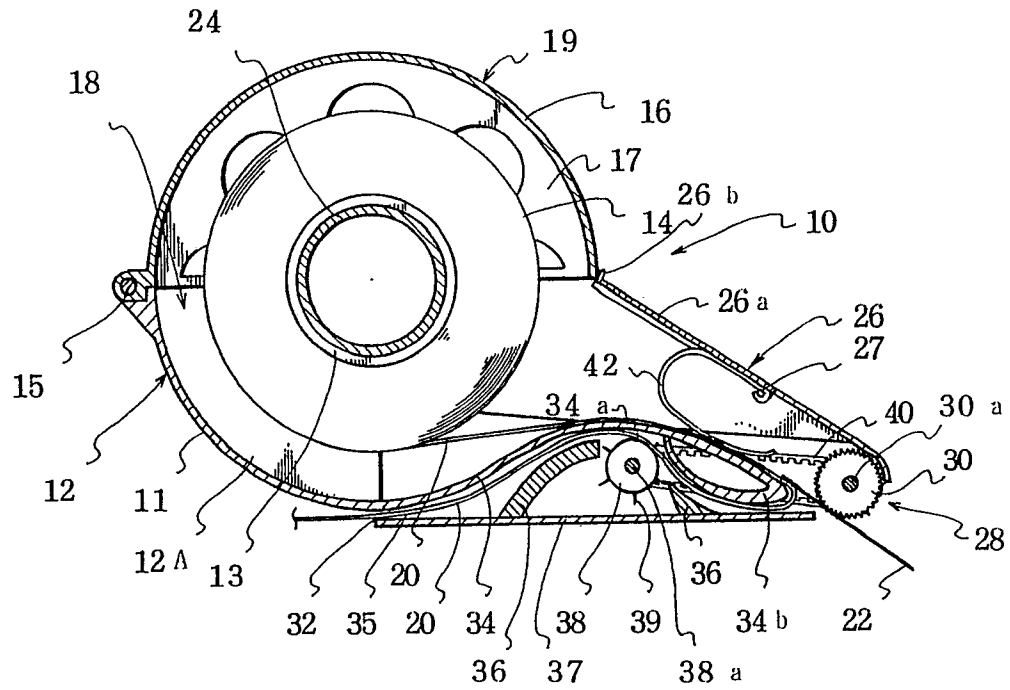


FIG. 2

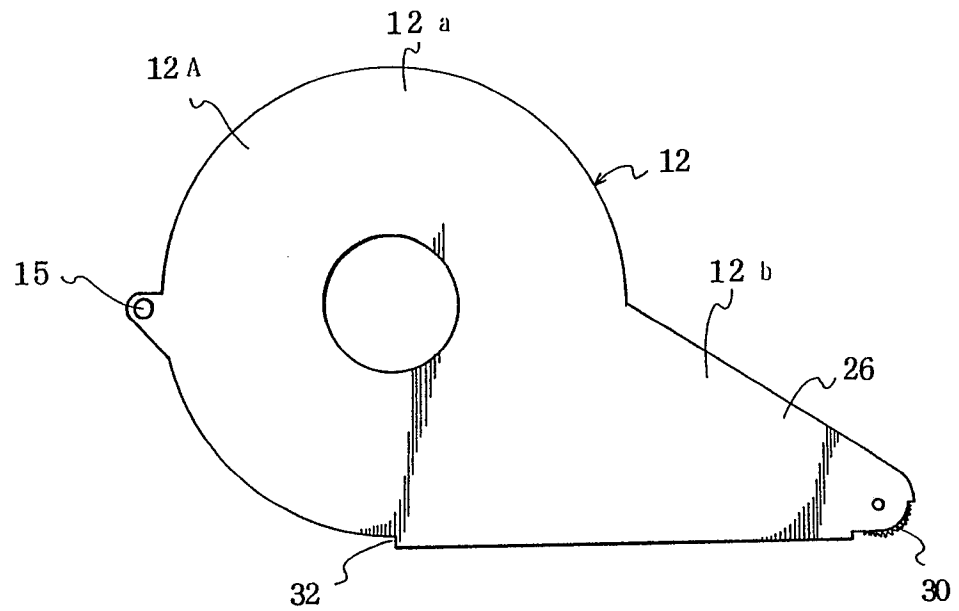


FIG. 3

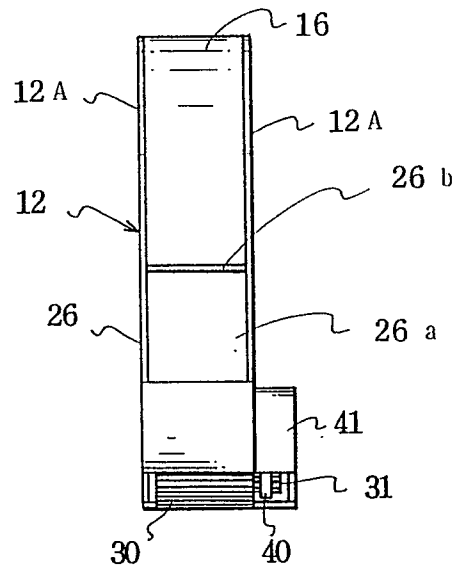


FIG. 4

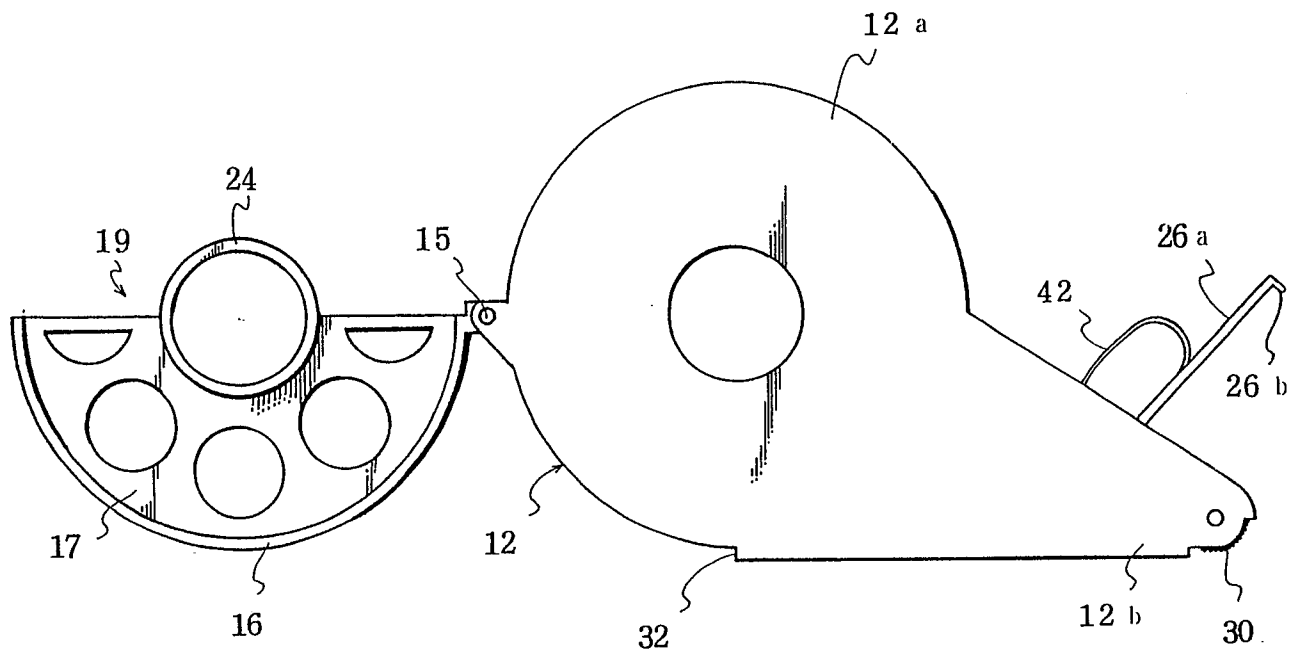


FIG. 5

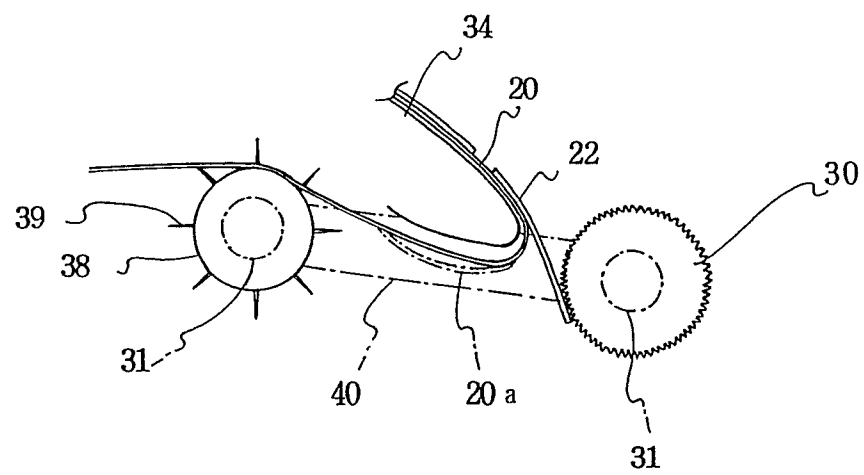
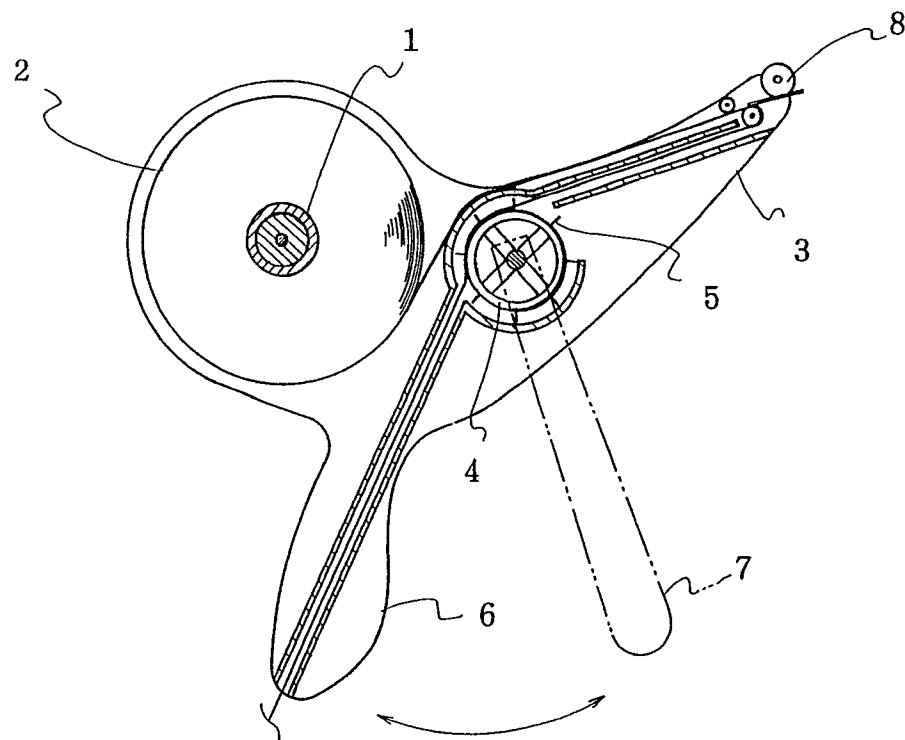


FIG. 6



INTERNATIONAL SEARCH REPORT

International Application No

PCT/JP88/00156

I. CLASSIFICATION OF SUBJECT MATTER (If several classification symbols apply, indicate all) ³ According to International Patent Classification (IPC) or to both National Classification and IPC <div style="display: flex; justify-content: space-between; font-family: monospace; font-size: 1.2em;"> Int.Cl⁴ B65C11/00 </div>		
II. FIELDS SEARCHED <div style="text-align: center; font-size: 0.8em;">Minimum Documentation Searched ⁴</div> <div style="display: flex; justify-content: space-between; font-family: monospace; font-size: 1.2em;"> Classification System : Classification Symbols </div> <div style="display: flex; justify-content: space-between; font-family: monospace; font-size: 1.2em; margin-top: 10px;"> IPC B65C11/00-11/02 </div> <div style="text-align: center; font-size: 0.8em; margin-top: 10px;">Documentation Searched other than Minimum Documentation to the Extent that such Documents are Included in the Fields Searched ⁵</div> <div style="display: flex; justify-content: space-between; font-family: monospace; font-size: 1.2em; margin-top: 10px;"> <div> Jitsuyo Shinan Koho Kokai Jitsuyo Shinan Koho </div> <div> 1926 - 1988 1971 - 1988 </div> </div>		
III. DOCUMENTS CONSIDERED TO BE RELEVANT ¹⁴		
Category [*]	Citation of Document, ¹⁶ with indication, where appropriate, of the relevant passages ¹⁷	Relevant to Claim No. ¹⁸
X	JP, B2, 54-2559 (Heinrich Hellmann) 8 February 1979 (08. 02. 79) & GB, A, 1330120 & CA, A1, 961009 & DE, B2, 2116984	1
Y	JP, B2, 54-2559 (Heinrich Hellmann) 8 February 1979 (08. 02. 79) & GB, A, 1330120 & CA, A1, 961009 & DE, B2, 2116984	2-14
Y	JP, A, 57-194935 (Kurata Kenji) 30 November 1982 (30. 11. 82) (Family: none)	2-14
Y	JP, U, 60-90109 (American Super Label Kabushiki Kaisha) 20 June 1985 (20. 06. 85) (Family: none)	2-14
<div style="display: flex; justify-content: space-between; font-size: 0.8em;"> <div style="width: 45%;"> [*] Special categories of cited documents: ¹⁶ "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier document but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed </div> <div style="width: 45%;"> " T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention " X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step " Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art " &" document member of the same patent family </div> </div>		
IV. CERTIFICATION		
Date of the Actual Completion of the International Search ²		Date of Mailing of this International Search Report ²
April 12, 1988 (12. 04. 88)		April 25, 1988 (25. 04. 88)
International Searching Authority ¹		Signature of Authorized Officer ²⁰
Japanese Patent Office		